Library Application

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Introduction

We aim to develop a user-friendly desktop application for a physical library, enabling book search via ISBN and virtual loaning. Our solution will enhance member management, book transactions, cataloguing, and record-keeping, improving efficiency for both library employees and it's members.

Our goals

1. Improve the efficiency of library operations by streamlining and automating common tasks, such as cataloguing, member management, and book transactions.
2. Enhance the user experience for both library employees and members by providing a user-friendly interface that is engaging.

3. Increase the accuracy and reliability of library records by automating record-keeping and minimising manual errors.

4. Build a software application that is both dependable and functional, with the flexibility to expand and add new features as needed.

Our objectives

1. Develop a user-friendly interface that allows library staff to easily manage and track member information, book transactions, and cataloguing.

2. Implement a database system that reduces errors and enables real-time updates to library records.

3. Build a search functionality that enables members to search and find books easily, based on various search criteria such as author, title, and genre.

4. Create a reporting feature that generates real-time analytics and reports based on data collected by the system.

5. Ensure the system is reliable and secure to prevent data loss or unauthorised access.

Timelines & Constraints
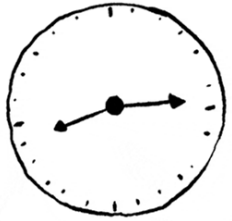
Our timeline includes documentation and development over eight weeks, with a progress submission at week four.

Challenges may arise from unexpected development issues, code integration, and the shift to C# and WPF framework. We may need to adjust the project scope to meet deadlines.

Agile Methodology

Agile methodology is recommended for the project, aligning with industry standards. Daily 15-minute meetings will facilitate communication and collaboration among team members. Multiple meetings may occur to ensure effective progress tracking and coordination.
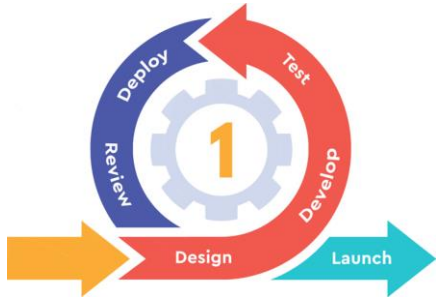
Sprint Review Meeting Process:

1. Review sprint goals, roadmap elements, and milestones
2. Provide a status overview of finished and unfinished items
3. Demonstrate functionality and build progress
4. Gather feedback from stakeholders
5. Assess team progress using statistical models
6. Identify and address project risks and propose solutions.

Researching requirements

The identification of functional and non-functional requirements is an essential step in software development that ensures that the software meets the needs of the end-users.

Research will involve engaging stakeholders, including library staff and members to help identify functional and non-functional requirements for the library application. These requirements are organized, prioritized, and documented in an SRS document.

Interview Example - Librarian

We formulated a number of questions then collectively took turns roleplaying potential responses from the librarian's perspective. We then selected what we thought would be the best responses.

Interviewer: What are some of the main challenges you face in managing the library's collection and transactions?

Librarian:
One of our main challenges is keeping track of all the books that are borrowed and returned. We also have a lot of members who come in and out of the library, so managing their records and membership status can be time-consuming.

Interview Example - Member

Interviewer:
What are some challenges you have faced when using library services in the past?

Library member:
As a library member, I have faced a few challenges in the past. Firstly, I have found it difficult to keep track of the books I have borrowed and when they are due back. Secondly, it can be frustrating when the library does not have the books I am looking for. Lastly, sometimes the library can be quite busy, which means I have to wait in line to borrow or return books.

Observations - Physical library

Observations can provide valuable insights into user behaviours, preferences, and pain points within the library setting, here are some observations I've (Ben) seen when stopping by my local library.

- Users browse through bookshelves, flipping through pages, and examining books.

- Users seeking assistance from library staff, asking questions about where to find things.

- Interactions between users and library kiosks for borrowing books.

- Users searching for books using the same kiosks for searching the library catalogue.

- Users utilising study spaces and seating areas within the library.

Observations - Website

We observed Dominic interacting with the Auckland libraries website.

- User initiating a search, such as entering keywords, book titles, or author names.

- Use of search filters or advanced search options to narrow down the search results.

- Interaction with the search results page, including scanning through the list of books, examining book covers, and reading book descriptions or summaries.

- Clicking on a specific book to view more details, such as availability, location, or additional information.

- Engagement with features like "Related Books" or "You may also like" sections for exploring similar titles and topics

Creating user stories

User stories are useful because they provide a concise and user-centric description of a feature or requirement. They capture the "who," "what," and "why" of user needs, helping to align development efforts with customer value.

We used the following format:

User story: As a [description of user], I want [functionality], so that [user benefit].

Acceptance criteria: This is what needs to be fulfilled to meet the users needs and complete the story: Given [how things begin], when [action taken], then outcome of taking action].

User Story 1 - Member loaning a book

User story:

As a library user I want to take out (loan) a book with minimal effort so that I can borrow a book easily.

Acceptance Criteria:

1. The library user should be able to search for a desired book by title, author, or subject.

2. The system should display the availability of the book (whether it is currently on loan or available for borrowing).

3. The library user should be able to select the book they wish to borrow.

4. Upon verifying the user's credentials, the system should record the borrowing transaction and update the book's status as "on loan."

5. The user should receive a confirmation message indicating successful loan of the book, along with the due date for its return.

6. If the desired book is not available, the system should provide alternative suggestions or a waitlist option if applicable.

Hi-fi prototype

Yoobee Campus Library

Username

Password

Submit
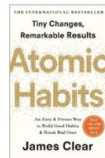
Welcome back to Sam's dashboard

My loaned books

Atomic Habits
Non-Fiction, Psychology
Available

Fungi of Aotearoa
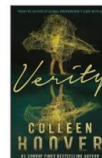Non-Fiction, Biology
Not available

Atomic Habits
Non-Fiction, Psychology
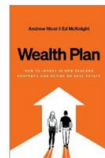Available

Hogwarts legacy...
Non-Fiction, Biology
Not available

One
Non-Fiction, Cooking
Available

Verity
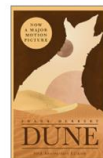Fiction, Adventure
Not available

View more

My wishlist

Atomic Habits
Non-Fiction, Psychology

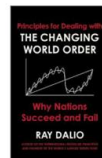**Fungi of Aotearoa**
Non-Fiction, Biology

Atomic Habits
Non-Fiction, Psychology

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Non-Fiction, Cooking

Verity
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View more

Sam Thomson

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Current loans

User Settings

Browse books

Sam Thomson

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- Current loans

User Settings

Enter search term

Search name, genre, author or ISBN [Search]

Content filters

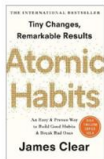[Genre ▾] [Availability ▾] [Sort by... ▲]

A to Z
Z to A
Popularity

Showing 437 search results

Atomic Habits
Non-Fiction, Psychology
Available

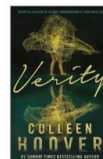**Fungi of Aotearoa**
Non-Fiction, Biology

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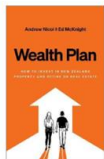Available

Hogwarts legacy...
Non-Fiction, Biology

One
Non-Fiction, Cooking
Available

Verity
Fiction, Adventure
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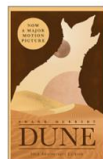Fiction, Adventure

My wishlist

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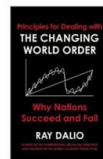**Fungi of Aotearoa**
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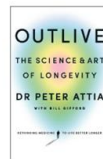Non-Fiction, Psychology

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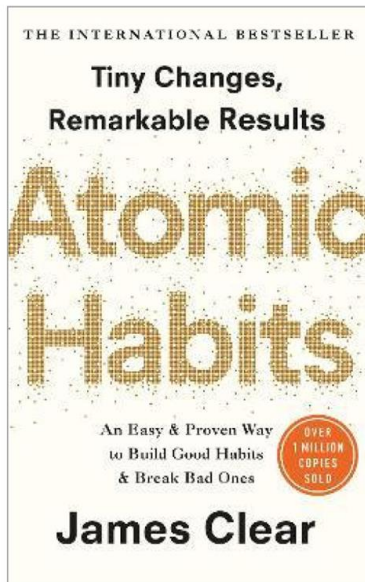
Verity
Fiction, Adventure

Sam Thomson

Home

Browse books

My wishlist

Current loans

User Settings

Atomic Habits

By author : James Clear
Genre's : Non-fiction, Psychology

Available for loan

Book description

No matter your goals, Atomic Habits offers a proven framework for improving--every day. James Clear, one of the world's leading experts on habit formation, reveals practical strategies that will teach you exactly how to form good habits, break bad ones, and master the tiny behaviors that lead to remarkable results.

If you're having trouble changing your habits, the problem isn't you. The problem is your system. Bad habits repeat themselves again and again not because you don't want to change, but because you have the wrong system for change. You do not rise to the level of your goals. You fall to the level of your systems. Here, you'll get a proven system that can take you to new heights.

Member ratings

★★★★☆ 4.1 stars - 10 ratings

Add rating ∧
1
2
3
4
5

Loan this book!   Add to my wishlist

Overdue Books

Actions

| Send warning | Remove selected | Sort by... ⌃ |

| Date - Oldest |
| Date - Newest |

Showing 12 overdue books

Book ID Number	Issuer	Book name	Date issued	Issue period	Overdue by
1	James Smith	Atomic Habits	29/5/23	30 Days	101 Days
1	James Smith	Atomic Habits	29/5/23	30 Days	101 Days
1	James Smith	Atomic Habits	29/5/23	30 Days	101 Days
1	James Smith	Atomic Habits	29/5/23	30 Days	101 Days

Edit members

Administrator
James Smith

Overdue books

Edit content

Edit members

User Settings

Actions

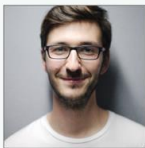| Add new member	Remove selected	Edit selected	Sort by... ∧

A to Z

Z to A

Showing 12 overdue books

Member ID number			ks Issued	Overdue
1			12	1
1			12	1
1			12	1
1			12	1

Add new member — ✕

First name

John

Last name

Smith

Address

Non fiction, Politics

Profile image file location

/path/to/file

Add member

Edit content - Add, remove, change

Add new book

Book ID Number		Author
1		James Clear
1		James Clear
1		James Clear
1		James Clear
1		James Clear
1		James Clear
1		James Clear
1		James Clear

Administrator
James Smith

Overdue books

Edit content

Edit users

User Settings

Add content

The Changing World Order

Book author

Ray Dalio

Genre/s

Non fiction, Politics

Book description

A few years ago, renowned investor Ray Dalio began noticing a confluence of political and economic conditions he hadn t encountered before in his fifty-year career. They included large debts and zero or near-zero interest rates in the world s three major reserve currencies; significant wealth, political, and values divisions within countries; and emerging conflict between a rising world power (China) and the existing one (US). Seeking to explain the cause-effect relationships behind these conditions,

Book cover image file location

/path/to/file

Add Book

Thanks